Embossing a Micrometer Frame

The illustrations show the method used by the J. T. Slocomb Company for embossing the table of decimal equivalents on the frame of their micrometer, a decidedly novel process which was pronounced impossible by some whom they consulted in regard to it.

Fig. 1 shows one of the frames both before and after embossing. A close examination will show the clear-cut figures as well as the clean lines all around the raised edge.

The embossing die consists of three parts, as can be seen from Fig. 2, these being shown in position in Fig. 3. The central portion is simply a retaining die for the edge of the micrometer frame, the metal being prevented from spreading by the outlines of the bow in the center piece. It will be seen that the embossing portions of the upper and lower die reach into the central portion, so that there is no opportunity for the metal to flow in any direction except as controlled by the dies themselves.

FIG. 1. FRAME BEFORE AND AFTER EMBOSSING

Editorial Correspondence

An interesting example of the cold flowing of metals under heavy pressures.

The small figures of a decimal-equivalent table are raised into the die so that each is very distinct and readable, showing a much easier flow than might be imagined.

This stiffens the frame and gives a grip similar to nurling.

Starting with a blank 0.210 inch thick, the edge is raised and the decimal equivalent forced up on each side to the following dimensions for the finished frame. After embossing the flat surface at the base of the figures is 0.193 inch thick and the thickness at the raised edge is 0.220 inch, while the tops of the figures are 0.210 inch. This gives some idea of the flow of the metal under the pressure of the dies.

The pressure varies from 300 to 325 tons, which gives a pressure of about 100 tons per square inch of surface when both sides are considered.

This makes a particularly stiff frame and is a nice piece of embossing. Users of the micrometer liken the feeling to that of a nurling which allows the frame to be easily held between the thumb and fingers.

An idea if the size of dies and the micrometer frames can be secured from Fig. 2, where a two-foot rule is shown folded on top of the central piece of the die.

F. H. C.

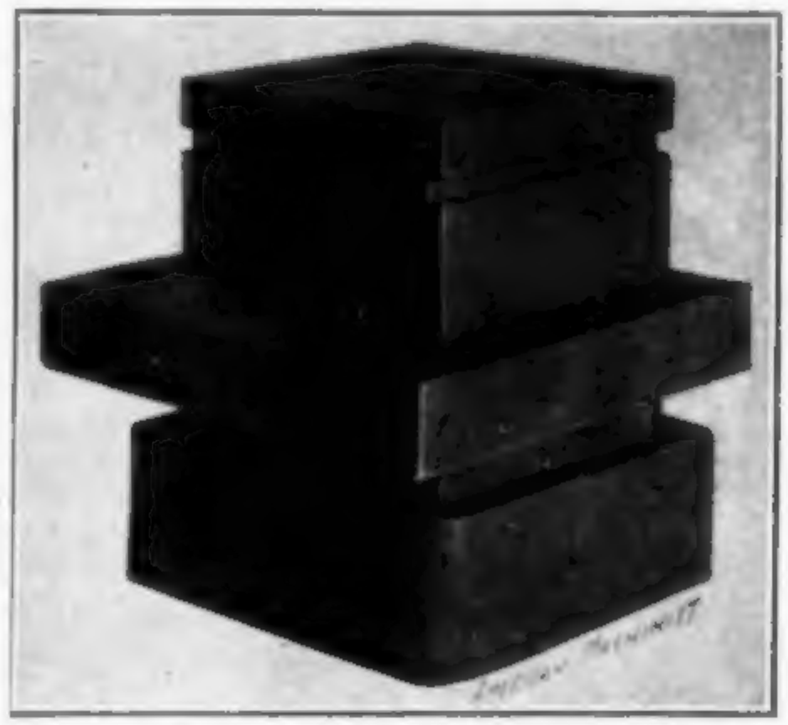

FIG. 3. THE DIE IN POSITION

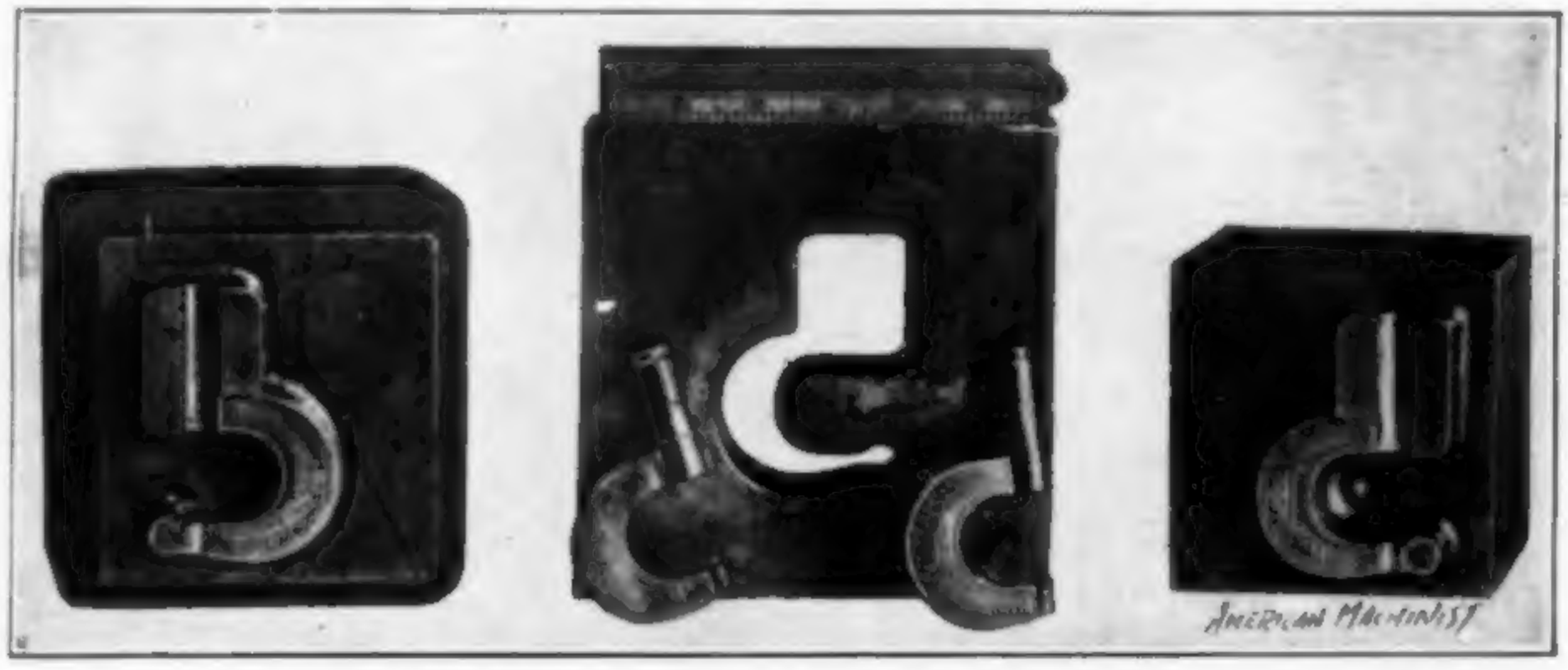

FIG. 2. THE DIES FOR EMBOSSING THE MICROMETER FRAME